

WHAT IS CLAIMED IS:

1. An overload control method of a data communication system comprising:
judging whether an access network is overloaded; and
determining a class of the overload and restricting an originating call and a
termination call according to the determined class, when the access network is overloaded.

2. The method of claim 1 wherein, the determining and restricting is performed
periodically until the overload judgment is released.

3. The method of claim 2, wherein the overload judgment is released when an
overload class is consecutively maintained at a lowest level for more than a prescribed
number of periods.

4. The method of claim 1, wherein when the determined class is lower than a
base-level, only the originating call is restricted, and wherein when the determined class is
higher than the base-level, the termination call and the originating call are restricted.

5. The method of claim 4, wherein when the determined class is higher than the
base-level, all the originating calls and some termination calls are restricted.

6. The method of claim 4, wherein the base-level can be changed arbitrarily by an operator, and wherein the base-level is an initial value of the overload class set when an access is judged to be overloaded.

7. The method of claim 1, wherein the restriction of the originating calls is performed by an access terminal according to an instruction of a base station processor of the access network.

8. The method of claim 1, wherein the restricting the originating call comprises:

- loading a prescribed value according to the determined class from a database;
- carrying the prescribed value on a message parameter and transferring it to an access terminal;
- obtaining a persistence probability value with reference to the received prescribed value and generating a random number; and
- comparing the random number with the persistence probability value, attempting a call originating when the random number is less than the persistence probability value, and attempting a call originating according to an access channel cycle when the random number is not less than the persistence probability value.

9. The method of claim 1, wherein the overload judging comprises:

- measuring a load of the access network at a predetermined interval;
- comparing the measured load with a reference load; and

judging that the corresponding access network is overloaded when the measured load is greater than the reference load for a prescribed number of consecutive intervals.

10. The method of claim 9, wherein the reference load has a tolerance margin of about 2%.

11. An overload control method of a high speed data communication system comprising:

checking a load state of an access network;

determining a class of overload when the access network is overloaded and determining a call acceptance rate according to the determined class; and

restricting an originating call and a termination call in accordance with the call acceptance rate.

12. The method of claim 11, wherein when the determined class is lower than a base-level, only an originating call is restricted, and wherein when the determined class is higher than the base-level, both the termination call and the originating call are restricted.

13. The method of claim 12, wherein when all the originating calls and some termination calls are restricted the determined class is higher than the base-level.

14. The method of claim 11, wherein the checking the load state comprises:

periodically measuring a load of the access network;
comparing the measured load with a reference load; and
judging that the corresponding access network is overloaded when the measured load
is greater than the reference load for a prescribed number of consecutive periods.

15. The method of claim 11, wherein the restriction of the originating call is
performed by an access terminal.

16. The method of claim 11, wherein the restricting the originating call comprises:
loading a control signal value according to the determined class;
carrying the control signal value on an access parameter and transferring the control
signal to an access terminal;
obtaining a persistence probability value with reference to the received control signal
and generating a random number between 0 and 1; and
comparing the random number with the persistence probability value:
attempting originating calls when the random number is smaller than the persistence
probability value, and attempting the originating calls according to an access channel cycle
when the random number is not smaller than the persistence probability value.

17. The method of claim 16, wherein the persistence probability value (p) is
obtained by the following equation:

$$p = 2^{-(n/4)}, \text{ wherein 'n' is the control signal value.}$$

18. The method of claim 17, wherein the control signal is APersistence value.
19. A data communication system, comprising:
 - an access network that includes a processor configured to repeatedly determine a variable load status of the access network, and wherein the processor determines a class of overload when the access network is overloaded;
 - an access terminal coupled to the access network configured to restrict originating calls in accordance with the overload class, wherein a call acceptance rate is judged from the overload class that restricts both originating and termination calls when the determined class is below a base-level and restricts the originating calls when the determined class is not below the base-level;
 - a packet control unit coupled to the access network configured to provide packet service to the access terminal; and
 - an authentication server coupled to the packet control unit configured to provide authentication functions to the packet control unit.